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SEDGES OF HENRY COUNTY.

BY JOHN THEODORE BUCHHOLZ.

Henry County lies in the southeastern part of Iowa, in one of the most fertile sections of the state. It has an area of 432 square miles or rather open prairie, except the borders of the streams, which were originally fringed with native forests.

The Skunk River with its tributaries drains the whole county. It enters the county near the northwest corner, a few miles south of Wayland. Thence, it wends its way southward mostly on the other side of the border line to within a few miles north of Rome, where it resumes its southeasterly course. After making a bend toward the northeast, it deviates little from its general diagonal course through the south half of the county. In the upper part of this section of its course, it flows through an old pre-glacial valley which it abandons a short distance south of Rome. From this place, to the point at which it leaves the county, it occupies a newer, narrower and less eroded valley.

This newer part of the valley near Oakland Mills and east along the river bottom contains many lowlands both open and wooded, which were visited at different times. Many of the swamp and lowland species of the sedges are found here.

Big Cedar Creek is the largest tributary to the Skunk River within the limits of the county. It enters near the southwest corner of Salem township, and after making a few turns, enters the "Grand Valley." Here it receives the waters of the Little Cedar Creek and flows meanderingly northward until it joins the Skunk River near Rome.

Big Creek is the second largest tributary. It drains the open prairies of the north central part of the county. It arises just beyond the borders of Canaan township, flows westward until within a few miles northwest of Mt. Pleasant, when it turns south, and a little later, southeast. Here it flows parallel to the Skunk River about ten miles, joining the latter three miles west of Lowell. The headwaters of Big Creek are within ten miles of its mouth, and yet this winding stream has a length of more than seventy miles. Big Creek is a comparatively new stream. Its channel has been carved since the Kansan drift spread over this area.

This valley and the territory enclosed by this stream received most attention in the work. All but a few species found elsewhere in the county were duplicated within its drainage system. On account of its meandering course its current is slow and its bottom lands are rich in alluvium. All along its course it offers many bogs and swales, or low rich ground so favorable to sedges.

Crooked Creek drains the country around Winfield, and numerous other small streams all pay tribute to the Skunk River system.

Two distinct topographical areas are recognized in the county. The first consists of an undulating prairie, moderately well drained and occupying the north and northeastern portion of the county. This region belongs mostly to the Kansan drift plain, but it is not well eroded, due to its distance from any stream of considerable size. Rounded ridges of irregular hills mark the marginal moraine of the Illinoian drift sheet in the eastern part of the county. These hills extend northward from Baltimore to New London townships and may be seen from Canaan. They pass out of the county in a northeasterly direction. Further south, in Baltimore township, they are crossed by the Skunk River and lost in the eroded surface.

The second distinct topographical area is represented by the southern and western portion of the county and is well eroded. The topography here has been impressed upon it largely by the Skunk River and its dendritic branches. These streams have intersected the region in all directions, cutting their channels entirely through the drift into the underlying rock. This gives us here a very rugged country, a diversified landscape of hills, upland, and valley.

The central portion of the county lies between these two topographical areas and combines the characters of both. Beginning a few miles north of Mt. Pleasant, as one goes south, the topography of these two areas gradually blends from the prairie upland type to the rugged hills and bluffs of the Skunk River. Thus it is possible that this area which was most extensively studied is quite representative of the whole county in its floral conditions.

Big Creek and its valley, the Skunk River south of Mt. Pleasant, and the intervening prairies receive considerable attention. This area affords a variety of conditions. The prairies north offer many bogs and swales; the low bottom lands of the Skunk River and Big Creek with their timber, offer swamps and marshes in alluvial soil, and the forested hillsides and open prairies bordering these streams, offer a great variety of conditions, all within a rather small area.

As has already been noted, the greater part of the surface deposits are of Kansan drift origin. This is a bluish clay where it is exposed in a thick bed, and contains numerous small boulders. However, where it is exposed along streams or roadsides it is usually of a red or reddish brown color, due to oxidation. All this drift sheet is covered by a thin mantle of loess, except where eroded and removed by streams.

The valleys of the Skunk River and the Big Cedar Creek are broad, averaging about one mile in width in this county. Most of the surface of this flood plain has received a rich alluvium deposit of sand and finer soil particles. Big Creek also flows through a rich alluvial plain in the lower part of its course. The soils of the prairies are dark colored and very rich in humus.

The genus *Carex* is the largest of the sedge family (Cyperaceae) comprising probably more than two-thirds of the species. They are a very difficult group because the unisexual, monoecious or dioecious flowers offer so little variation; hence the specific characters are founded on the mature fruit, the character and inflorescence of the spikes, on the size and shape of the achene, on the scales, and on the character and width of the leaves. These differences are often so slight and indefinite and the characters so variable, that they make the determination of species exceedingly uncertain. The mature fruit and the whole plant is necessary for accuracy in identification. Almost all the common species are sufficiently matured for study about the middle of June.

The sedges are for the most part plants of marshes, although there are some notable exceptions. They form an important part of the vegetation in bogs and swales, and are of some economic importance on account of the good pasturage they afford. Those found in the uplands and meadows are fewer, rather scattered and inconspicuous. Likewise those in the woods are usually not in colonies but more or less scattered.

Among the grasses we find many introduced species of plants which thrive well in their new habitat, but among the sedges this is very rare, none being reported thus far from Iowa. The reason is very evident.—Most grasses grow under conditions very much like our cultivated plants and are easily distributed with seeds of all kinds. The sedges, on the other hand, are mostly hydrophytic, or inhabitants of woods and lowlands that are not cultivated. The xerophytic species are easily destroyed by cultivation, as nearly all the sedges are perennial by root-stocks.

Distribution of seeds is accomplished by various means, but it might be said at the outset that the plants are usually not highly specialized

in this respect: Some have inflated perigynia which enable them to float, and they are thus carried by streams and by the action of waves for long distances. Other water or swamp inhabitants have no specialized structure for seed dispersal, but are doubtless carried over great distances in the mud which adheres to the feet of migratory water fowls and other animals. Some of the sedges are able to pass through the alimentary canal of herbivorous animals, being protected by their thick walled, closed achene, and are probably distributed in this way. This possibly throws some light on the reason for the scattered and sparse distribution of many of the xerophytic forms of our meadows. For this reason and the fact that they are perennial, they need no highly specialized means for seed dispersal; in fact, often the simpler the achene the better.

The collections for the studies were made mostly during June, 1908.

At this time about 150 specimens were collected, and from them 32 species identified. The specimens were compared with those of the herbarium at the State University of Iowa and the determinations confirmed, reference being also made to the herbarium at Ames.

The writer feels that this list, while it possibly includes quite as many as may be collected at any one time, is necessarily incomplete. Among the sedges many species flower only under favorable conditions. Thus a complete carex flora may not be observed in any one season.

Family-Cyperaceae J. St. Hil.

Grass like or rush like herbs. Stems (culms) triangular, solid (rarely hollow), quadrangular, terete or flattened, and rather slender. Roots fibrous and many species perennial by long rootstocks. Leaves narrow, with closed sheathes. Flowers perfect or imperfect, arranged in spikelets, one (rarely 2) in the axil of each scale, glume or bract, the spikelets solitary or clustered, 1-many-flowered. Scales two ranked or spirally imbricated, persistent or deciduous. Perianth hypogynous, composed of bristles, or inferior scales, rarely calyx-like, or entirely wanting. Stamens 1-3, rarely more. Filaments slender or filiform. Anthers two-celled. Ovule one, anatropous, erect, in the one-celled ovary. Style 2-3 cleft or rarely simple or minutely 2-toothed. Fruit a lenticular plano-convex, or trigonous achene. Endosperm mealy, embryo minute.

About 65 genera and 3,000 species of wide geographic distribution.

Genus *Carex* L. Sp. Pl. 972 (1753).

Grass like Cyperaceae, perennial by rootstocks. Culms mostly 3-angled. Leaves 3-ranked, the upper elongated, or very short (bracts) and subtending the spikes of flowers, or wanting. Flowers monoecious or dieocious, solitary in the axils of bracts (scales), Spikes either wholly pistillate, wholly staminate, or bearing both staminate or pistillate flowers (androgynous). Perianth none. Staminate flowers of three stamens, the filaments filiform. Pistillate flowers of a single pistil with a style and 2 or 3 stigmas, borne on a very short axis in the axil of a sac-like bractlet or second bract called the perigynium (utricule), which completely encloses the achene.

A vast genus of more than 1,000 widely distributed species, mostly in the temperate zone.

(The classical Latin name of obscure signification; probably derived from the Greek Keiro, to cut, on account of the sharp leaves of many of the species).

1—*Carex Asa-Grayi* Bailey, Gray's sedge.

Br. Illus. Flora, i, 293, fig. 576; Gray's Man., 6th ed, 592; Arthur, Cont. Fl. Ia. iii; Hitchcock, Pl. Ames, 524; Cratty, Ia. Sedges, 335; "Brendel, Fl. Peoriana, 63."

C. Grayi Carey, Sill. Jour., 2nd ser., iv, 22 (1847), not C. grayana Dew. (1824); Gray's Man. 7th ed., 253.

Infrequent, swamps and marshes, along Skunk river south of Mt. Pleasant. June 17, '08.

2—*Carex lupulina* Muhl., Hop sedge.

"Schk. Riedg., ii, 54 (1906);" Br. Illus. Flor, i, 294, Fig. 678; Arthur, Fl. Iowa, 34; Hitchcock, Pl. Ames, 524; MacMillan, Metas. Minn. Val., 129; Tracy, Fl. Mo., 93; Bot. Surv. Nebr., iv, 45; Fink, Iowa Acad. Sci., iv, 105; Cratty, Iowa Sedges, 336; Shimek, Ia. Geol. Surv., xvi, 169; "Brendel, Fl. Peoriana, 63.

Frequent in swampy ground. Along Skunk river and Big creek in very swampy places. June 16-18, '09.

3—*Carex comosa* Boott. Bristly sedge.

Br. Illus. Fl. i, 301, f. 698; Gray's Man. 6th ed., 596; 7th ed. 251; Arthur, Cont. Fl. Ia., v; MacMillan, Metas, Minn. Val., 126; Bot. Surv. Neb. iii, 16; Cratty, Ia., Sedges, 338.

"*C. pseudo-cyperus* var. *comosa* Boott. Bot. Cal. ii, 252 (1880). *C. pseudo-cyperus* var. *americana* Hochst., Herb. Unio. Itin. (1837).

Probably very rare. A small specimen was found with the collection some time afterward, thus its habitat is not noted. Probably along swamps and ponds in low ground. June, 1908.

4—*Carex squarrosa* L., Squarrose sedge.

L. SP. Pl. ii, 937 (1753); Br. Illus. Fl. 301, f. 700; Gray's Man. 6th ed. 597, 7th ed, 250; Arthur, Cont Fl. Ia., iii, MacMillan Metas. Minn. Val., 126; Tracy Fl. Mo., 94; Webber, App. Fl. Neb. 23; Cratty, Iowa Sedges, 338.

Frequent, in low open ground. Found in swales along creeks north of Mt. Pleasant, and along river bottoms south. June 16-18, '08.

4—*Carex typhinioides* Schwein. Cat-tail sedge.

Br. Illus. Flora. i. 302, f. 701; Gray's Man. 7th ed, 250, f. 531; Cratty, Ia. Sedges, 339; "Ann. Lyc. i, 66 (1824).

C. squarrosa Gray's Man. 6th ed., 596 (1890) in part; *C. squarrosa* var. *typhinioides* Dewey, Am. Jour. Sci., x, 316 (1826).

Rare, in a swale north of Skunk river along railway tracks. Not typical. Leaves generally less than typical (in width), bracts very short and narrow only a little longer than the culm. Spikes narrower, about 3-4 inch wide. Staminate point of spikes wanting. Many of the scales are awned, probably all.

6—*Carex aristata* R. Br.

Rich. Bot. App., 751 (1823); Br. Illus. Flora, 302, f. 703; Gray's Man. 6th ed., 598; Hitchcock, Pl. Ames 594, and Bull. Torr. Bot. Club., xvi, 70; MacMillan, Metas. Minn. Valley, 124; Tracy, Fl. Mo. 92; Cratty, Iowa Sedges, 340

C. Trichocarpa var *aristata* Bailey, Bot. Gaz., x 293 (1885); Gray's Man. 7th ed. 250. Quite rare, June 30, 1908.

7—*Carex Shortiana* Dewey. Short's sedge.

Dewey Am. Jour. Sci., xxx 60 (1836); Br. Illus. Flor, i, 303; Gray's Man. 6th ed., 596, 7th ed. 234; Tracy Fl. Mo., 94; Webber, Fl. Neb., 98; Cratty, Iowa Sedges, 340; Bessey, Cat. Fl. Neb., 939.

Frequent in open seepy ground. Leaves 5 inches long. Very conspicuous plants, the abundant spikes giving the vegetation a brown coloring. South of Mt. Pleasant along roadside. June 17, 1908.

8—*Carex lanuginosa* Michx. Woolly sedge.

Fl. N. A. ii, 175 (1803); Br. Illus. Flora, i, 305, f. 711; Gray's Man. 6th ed. 597., 7th ed. 428; Arthur, Flora Ia. 34; Hitchcock, Pl. Ames, 527; MacMillan Metas. Minn. Val., 125; Bessey, Cont. Fl. Iowa, 124; Cratty, Iowa Sedges, 341.

C. filiformis var. *latifolia* Boeckl. Linn., xli, 309 (1805).

C. filiformis var. *lanuginosa* B.S.P. Prelim. Cat. N. Y. 63 (188).

Meadows and swales, not common. June 16, 1908.

9—*Carex stricta* Lam. Tussock sedge.

Encyc. Meth., iii, 378 (1789); Br. Illus. Fl. i, 308, f. 719; Gray's Man. 6th ed., 599. 7th ed., 321; Arthur, Fl. Iowa, 34; Hitchcock, Pl. Ames, 524; MacMillan Metas. Minn. Val., 123; Tracy, Fl. Mo. 95; Bessey, Cont. Fl. Iowa, 123; "Wheeler Fl. Milwaukee Co. Wis., 187; Fink, Ia., Acad. Sci., iv, 105; Cratty, Iowa Sedges, 342; Shimek, Ia. Geol. Surv., xvi, 169.

Common in marshy ground. June 5, 1908.

10—*Carex Davisii* Schwein & Torr. Davis' sedge.

"Mon. Car., 326 (1825);" Br. Illus. Fl. i, 318, f. 751; Gray's Man. 6th ed., 605; 7th ed., 234; Arthur, Fl. Ia. 34; Hitchcock, Pl. Ames, 525; MacMillan, Metas. Minn. Val., 120; Tracy, Fl. Mo., 93; Cratty, Ia. Sedges, 343.

Abundant, in low meadows and woods. June 14, 1908.

11—*Carex grisea* Wahl. Gray sedge.

"K. Acad. Handl., xxiv, 154 (1803);" Br. Illus. Flora, i, 321, f. 759; Gray's Man. 6th ed., 605, 7th ed., 244; Arthur, Flora Ia., 34; Hitchcock, Pl. Ames, 525; MacMillan, Metas. Minn. Val., 120; Tracy, Flora Mo., 93; Bessey, Cont. Fl. Ia., 124; Webber Fl. Neb., 98; Cratty, Ia. Sedges, 344; Bessey, Cat. Fl. Neb., n. 924.

Low woods and thickets, not typical, probably a variety. June 14, 1908.

12—*Carex granularis* Muhl. Meadow sedge.

Willd. Sp. Pl. iv, 279 (1805); Br. Illus. Flora, i, 322, f. 763; Gray's Man. 6th ed., 605, 7th ed., 244; Arthur, Cont. Fl. Iowa, iv; MacMillan, Metas. Minn. Val., 120; Tracy, Fl. Mo., 93; Bot. Surv. Neb., iv, 45; Cratty, Ia. Sedges, 344.

Not quite typical. Frequent in low meadows or open damp woods. June 14-17, 1908.

13—*Carex oligocarpa* Schk. Few-fruited sedge.

"Reid. Nacht., 58 (1806);" Br. Illus. Fl. i, 325, f. 771; Gray's Man., 6th ed., 607, 7th ed., 243; Arthur, Cont. Fl. Iowa, iii; Tracy, Fl. Mo., 94; Cratty, Ia. Sedges, 254.

Frequent in dense woods. Leaves more than 1 inch wide, otherwise quite typical. June 14-16, 1908.

14—*Carex tetanica* Schk. Wood's sedge.

Br. Illus. Fl. i, 326; Bessey, Cat. Fl. Neb. Series iii, p. 23.

Rare, open woods. June 14, 1908.

15—*Carex laxiflora blanda* (Dewey) Boott. Loose-flowered sedge.

"Ill. Car. 37 (1858);" Br. Illus. Fl. i, 327; Gray's Man. 6th ed., 607, 7th ed., 242; Tracy, Fl. Mo. 93; Cratty, Ia. Sedges, 347.

C. blanda Dewey. Am. Jour. Sci. x, 45 (1826).

C. laxiflora var. striatula Carey, Gray's Man. 2d ed., 524 (1852).

Common in woods and thickets. June 14-18, 1908.

16—*Carex Albursina* Sheldon. White Bear sedge.

Bull. Torrey Bot. Club, xx, 284 (1898); Br. Illus. Fl. i, 329, f. 781; Arthur Fl. Iowa, 34; Hitchcock, Pl. Ames, 524; Tracy, Fl. Mo., 93; Cratty, Ia. Sedges, 347; Shimek, Ia. Geol. Surv. xvi, 169.

C. laxiflora var. latifolia Boott. Ill. Car. (1858) not C. latifolia Moench. Gray's Man. 6th ed., 607, 7th ed., 243.

Woods and thickets, rather rare. June 22, 1908.

17—*Carex Pennsylvanica* Lam. Pennsylvania sedge.

"Encyc. iii, 388, 1789;" Br. Illus. Fl. i. 333, f. 975; Bailey in Gray's Man., 6th ed., 616; 7th ed., 236; Arthur, Fl. Iowa, 34; MacMillan, Metas. Minn. Val., 117; Hitchcock, Pl. Ames, 525; Tracy, Fl. Mo., 94; Cratty, Ia. Sedges, 304; Shimek, Ia. Geol. Surv. xvi, 169; Bessey, Catal. Fl. Neb. Series iii, p. 23.

Abundant, open woods and hillsides. May 30, 1908.

18—*Carex pubescens* Muhl. Pubescent sedge.

Willd. Sp. Pl. iv. 281 (1805); Br. Illus. Flora, i, 336, f. 802; Gray's Man., 6th ed., 613; 7th ed., 237; Arthur, Cont. Fl. Ia., v; Hitchcock, Pl. Ames, 525; MacMillan, Metas. Minn. Val., 116; Tracy, Flora Mo., 95; Cratty, Ia. Sedges, 350.

Frequent, woods and shady places. June 14, 1908.

19—*Carex Jamesii* Schwein. James' sedge.

"Ann. Lye. N. Y. i, 67 (1824) ;" Br. Illus. Fl. i, 337, f. 807; Gray's Man. 6th ed., 613; 7th ed., 335; Cratty, Ia. Sedges, 350.

C. steudellii Kunth, Enum. Pl. ii, 480 (1837).

Very rare. Grows in dense tufts in thick damp woods where other vegetation was scarce, south of Mt. Pleasant. June 18, 1908.

20—*Carex conjuncta* Boott. Soft Fox sedge.

(Boott) Ill. Car., 122 (1862) ; Br. Illus. Fl. i, 342., f. 822; Gray's Man., 6th ed., 614; 7th ed., 228; Arthur, Cont. Fl. Iowa, iii; Hitchcock, Pl. Ames, 525; Tracy, Fl. Mo., 93; Cratty, Iowa Sedges, 351.

Frequent, open seepy woods and meadows. Quite typical.

21—*Carex stipata* Muhl. Awl-fruited sedge.

Willd. Sp. Pl. iv, 253 (1805) ; Br. Illus. Flora, i, 343, f. 623; Gray's Man. 6th ed., 614; 7th ed., 228; Arthur, Fl. Ia., 33; MacMillan, Metas. Minn. Val., 115; Tracy, Fl. Mo., 94; Fink, Proc. Ia. Acad. Sci., iv, 105; Cratty, Ia. Sedges, 352; Shimek, Ia. Geol. Surv., xvi, 169; Bessey, Cont. Neb. Series iii, p. 23.

Not common, open swales in meadows. June 16, 1908.

22—*Carex vulpinoidea* Michx. Fox sedge.

Fl. No. Am., ii, 169 (1803) ; Br. Illus. Fl., i, 345, f. 830; Gray's Man., 6th ed., 615; 7th ed., 227; Arthur, Fl. Iowa, 33; Hitchcock, Pl. Ames, 525; MacMillan, Metas. Minn. Val., 113; Tracy, Fl. Mo., 95; Bessey, Cont. Fl. Iowa, 123; Fink, Ia. Acad. Sci., iv, 105; Cratty, Ia. Sedges, 354; Shimek, Ia. Geol. Surv., xvi, 169; Bessey, Cat. Fl. Neb., No. 940.

Abundant, low meadows and roadsides along ditches. Specimens collected quite large, ranging with the largest at the S. U. I. Herb. June 14, 1908.

23—*Carex xanthocarpa* Bicknell. Yellow-fruited sedge.

Bull. Torr. Bot. Club, xx, 22 (1896), Pl. vii; Br. Illus. Fl. i, 545, f. 831; Cratty, Ia. Sedges, 354.

C. setacea var. ambigua (Barratt) Fernald Gray's Man., 7th ed., 228.

Quite frequent along roadsides, very conspicuously yellow. Only once before reported from state. June 14, 1908.

24—*Carex rosea* Schk. Stellate sedge.

"Nacht xv. 179 (1806) ;" Br. Illus. Fl. i, 347., f. 835; Bailey in Gray's Man., 6th ed., 616; Gray's Man., 7th ed., 226; Arthur, Fl. Iowa, 33; MacMillan, Metas. Minn. Val. 112. Bessey, Cont. Fl. Ia., 124; Tracy Fl. Mo. 94; Webber, Fl. Neb., 98; Fink, Proc. Ia. Acad. Sci. iv, 105; Cratty, Iowa Sedges, 355; Shimek, Ia. Geol. Surv., xiv, 169; Bessey, Catl. Fl. Neb., No. 930.

Common, woods and thickets. Quite variable, sometimes with culms 3 ft. long. Along roadsides south of Mt. Pleasant, in sheltered places. June 15, 1908.

25—*Carex sparganioides* Muhl. Burreed sedge.

Willd. Sp. Pl. iv, 237 (1805) ; Br. Illus. Fl., i, 348, f. 839; Gray's Man., 6th ed., 616; 7th ed., 226; Arthur, Fl. Ia., 33; Hitchcock, Pl. Ames, 525; Tracy, Fl. Mo., 525; Bessey, Cont. Fl. Ia., 124; Cratty, Ia. Sedges, 356; Shimek, Ia. Geol. Surv., xvi, 169.

Quite rare, woods and thickets. June 14, 1908.

26—*Carex cephaloidea* Dewey. Thin-leaved sedge.

"Rep. Pl. Mass., 262 (1840) ;" Br. Illus. Flora, i, 348, f. 840; Gray's Man., 6th ed., 617; 7th ed., 237; Cratty, Ia. Sedges, 356; Bessey, Cat. Fl. Neb., No. 919.

Infrequent, dry hills and meadows. June 15, 1908.

27—*Carex cephalophora* Muhl. Oval-headed sedge.

Willd., Sp. Pl. iv, 220 (1805) ; Br. Illus. Flora, i, 349, f. 841; Gray's Man., 6th ed., 617; 7th ed., 226; Arthur, Fl. Iowa, 33; Hitchcock, Pl. Ames, 525; McMillan, Metas. Minn. Val., iii; Tracy, Fl. Mo., 93; Bessey, Cont. Fl. Iowa, 124; Fink, Ia. Acad. Sci., iv., 106; Cratty, Ia. Sedges, 356; Shimek, Ia. Geol. Surv., xvi, 169.

Very common, woods and meadows. June 14-19, 1908.

28—*Carex Leavenworthii* Dewey. Leavenworth's sedge.

Am. Jour. Sci. 2d Ser., ii, 246 (1846) ; Br. Ill. Flora, i, 349; Gray's Man., 6th ed., 617; 7th ed., 226; Cratty, Iowa Sedges, 357.

C. cephaloidea var. *angustifolia* Boott, Ill. Car. 123 (1862).

Rare, woods and thickets, along Skunk river. Probably somewhat larger than Britton's description calls for, but a very distinct species. June 17, 1908.

29—*Carex tribuloides* Wahl.

“K. ACAD. Handl. xxiv, 145 (1803), Pl. viii;” Britton, Illus. Flora, i, 356, f. 862; Gray’s Man., 6th ed., 629; 7th ed., 217; Arthur, Fl. Iowa, 34; MacMillan, Metas. Minn. Val., 108; Bessey, Cont. Fl. Iowa, 124; Fink, Proc. Ia. Acad. Sci., iv, 106; Cratty, Iowa Sedges, 359; Shimek, Ia. Geol. Surv., xvi, 169; Bessey, Cat. Fl. Neb., Series iii, p. 23.

Very common, several varieties of this possibly being present. June 14-18, 1908.

30—*Carex scoparia* Schk. Pointed Broom sedge.

Reidgr. Nacht., 20 (1806); Br. Illus. Fl., i, 356, f. 863; Gray’s Man., 6th ed., 620; 7th ed., 217; Arthur, Fl. Ia., 33; MacMillan, Metas. Minn. Val., 108; Bot. Surv. Nebr., iii, 16; Fink, Proc. Ia. Acad. Sci., iv, 106; Cratty, Ia. Sedges, 360.

Common, variable, in open swales. June 14, 1908.

31—*Carex cristatella* Britton.

Ill. Flora, i, 356 (1896); Gray’s Man., 6th ed., 620; 7th ed., 219 (*C. cristata* Schwein); Arthur, Flora Iowa, 34; Hitchcock, Pl. Ames, 525; MacMillan, Metas. Minn. Val., 109; Tracy, Fl. Mo., 93; Cratty, Ia. Sedges, 366; Shimek, Ia. Geol. Surv., xvi, 170.

C. cristata Schwein Ann. Lye N Y, i, 66 (1824) not Clairv. (1811); Gray’s Man., 7th ed., 219.

C. straminea var. *cristata* Tuck. Enum. Meth., 18 (1843).

C. lagopodicoides var. *cristata* Carey, Gray’s Man., 1st ed., 545 (1848). Abundant. June 14, 1908.

32—*Carex festuacea* Willd. Fescue sedge.

Willd., Sp. Pl., iv, 242 (1825); Br. Illus. Flora, i, 359, f. 871; Arthur, Fl. Ia., 34; MacMillan, Metas. Minn. Val., 106; Cratty, Iowa Sedges, 363; Shimek, Ia. Geol. Surv., xvi, 170.

C. festuacea Schkuhr Gray’s Man. 7th ed., 220.

Common, woods and shady places throughout. June 14-18, 1908.